

Service Hints



TH-P65V10M

Plasma Television

<PDP 2009 Model>

TH-P65/58/50V10M

TH-P42G10M

TH-P54/50/42S10M

TH-P50/42X10M

TH-P50/42C10M

Troubleshooting Guide

- Ver 2.0-

This service hints is published for technicians and engineers for repair. And it gives you the information how to judge the defective board of PDP. In the future, we will improve the contents for more easy diagnostic and trouble shooting.

Please file and use this Service Hints together with the main service manual and other publications related to models.

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.






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1. 2009 PDP Line up & Feature Comparison

1. 2009 PDP Line up & Feature Comparison

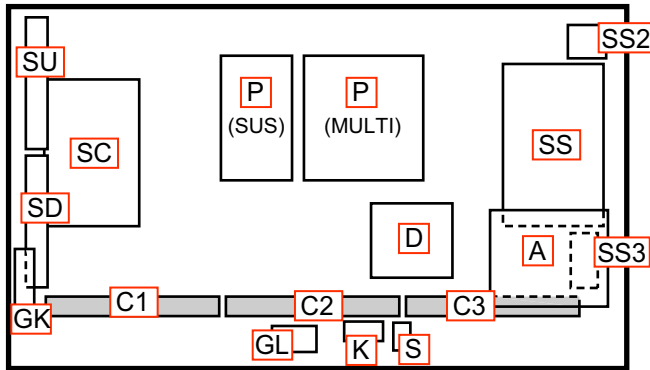
		V10 Series	G10 Series	S10 Series	X10 Series	C10 Series
						
Picture	Size	65/58/50	42	54/50/42	50/42	50/42
	Panel	Full-HD NeoPDP	Full-HD NeoPDP	Full-HD PDP	HD PDP	HD PDP
	AR Filter	Y	Y	Y	—	—
	Contrast Ratio	40,000:1	40,000:1	30,000:1	30,000:1	30,000:1
	Moving Picture Resolution	1080 lines	1080 lines	1080 lines	720 lines	720 lines
	600 Hz Sub-Field Drive	Y	Y	N (550Hz)	Y	Y
	24p Smooth Film	Y	—	—	—	—
	Digital Cinema Colour	Y	—	—	—	—
	Shades of Gradation	6144	6144	5120	5120	5120
	Deep Colour (10/12-bit)	Y	—	—	—	—
	x.v. Colour	Y	Y	Y	Y	Y
	THX Mode	Y	—	—	—	—
	3D Colour Management	Y	Y	Y	Y	Y
	Sub Pixel Control	Y	Y	Y	Y	Y
	C.A.T.S.	Y	Y	Y	Y	—
Sound	Speakers	Full-Range	Full-Range	Full-Range	Full-Range	Full-Range
Networking	VIERA Image Viewer	Y (AVCHD/MPEG2/JPEG playback)	Y (AVCHD/MPEG2/JPEG playback)	Y (AVCHD/MPEG2/JPEG playback)	Y (AVCHD/MPEG2/JPEG playback)	Y (JPEG playback)
	HDMI Input	4	3	3	3	2
	PC Input	Y	Y	Y	Y	Y
	LAN Port	—	—	—	—	—
	VIERA Cast	—	—	—	—	—
	VIERA Tools	Y	Y	Y	Y	Y
	VIERA Link (HDAVI Control 4)	Y	Y	Y	Y	Y
	Game Mode	Y	Y	Y	Y	Y

2. PCB Location & Function

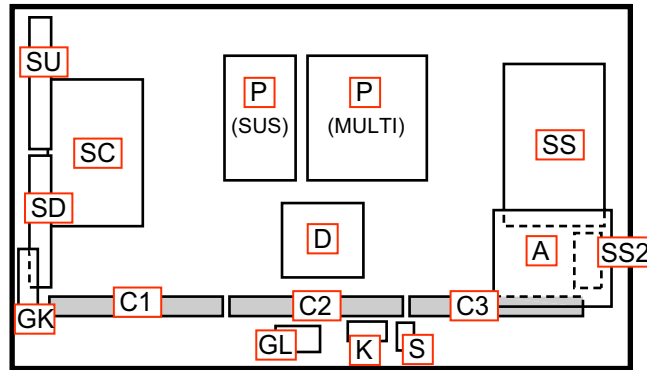
2. PCB Location & Function

V10 Series

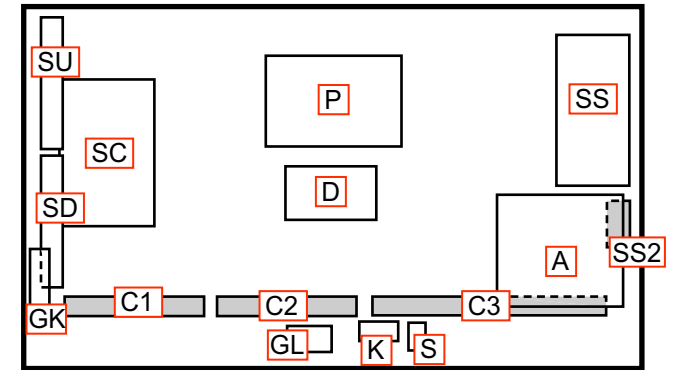
TH-P65V10M



TH-P58V10M



TH-P50V10M



Board Name	Function	Parts Number
P	Power Supply (SUS)	ETX2MM774MG
	Power Supply (MULTI)	ETX2MM774MA
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC,	TXN/A1DRUM
D	Format Converter, Plasma AI, Sub-Field Processor	TZTNP02DNUM
K	Remote receiver, Power LED, C.A.T.S sensor	TNPA4857AC
S	Power Switch	TNPA4858AB
GK	Key Switch	TNPA4875AB
GL	SD LED	TNPA4693AB
C1	Data Driver (Lower Right)	TNPA4990
C2	Data Driver (Lower Center)	TNPA4991
C3	Data Driver (Lower Left)	TNPA4992
SC	Scan Drive	TXNSC1DNUJ
SS	Sustain Drive	TXNSS1DNUJ
SS2	Sustain out (Upper)	TNPA4983
SS3	Sustain out (Lower)	TNPA4984
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TNPA4981
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TNPA4982

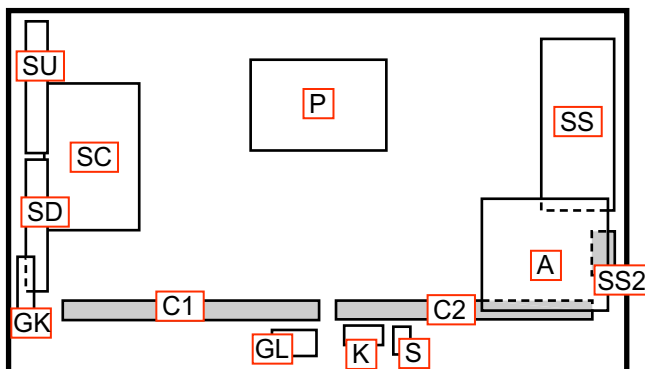
Board Name	Function	Parts Number
P	Power Supply (SUS)	ETX2MM774MF
	Power Supply (MULTI)	ETX2MM774MA
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC	TXN/A1DRUM
D	Format Converter, Plasma AI, Sub-Field Processor	TZTNP02DPUM
K	Remote receiver, Power LED, C.A.T.S sensor	TNPA4857AC
S	Power Switch	TNPA4858AB
GK	Key Switch	TXNGK1DRUM
GL	SD LED	TNPA4693AB
C1	Data Driver (Lower Right)	TNPA4987
C2	Data Driver (Lower Center)	TNPA4988
C3	Data Driver (Lower Left)	TNPA4989
SC	Scan Drive	TXNSC1DPUJ
SS	Sustain Drive	TXNSS1DPUJ
SS2	Sustain out (Lower)	TNPA4980
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TNPA4976
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TNPA4977

Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFK
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC	TXN/A1DRUM
D	Format Converter, Plasma AI, Sub-Field Processor	TZTNP02DRUM
K	Remote receiver, Power LED, C.A.T.S sensor	TNPA4857AC
S	Power Switch	TNPA4858AB
GK	Key Switch	TXNGK1DRUM
GL	SD LED	TNPA4693AB
C1	Data Driver (Lower Right)	TNPA4767
C2	Data Driver (Lower Center)	TNPA4768
C3	Data Driver (Lower Left)	TNPA4769
SC	Scan Drive	TNPA4782AF
SS	Sustain Drive	TNPA4783AF
SS2	Sustain out (Lower)	TNPA4804
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TNPA4788
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TNPA4789

2. PCB Location & Function

G10 Series

TH-P42G10M

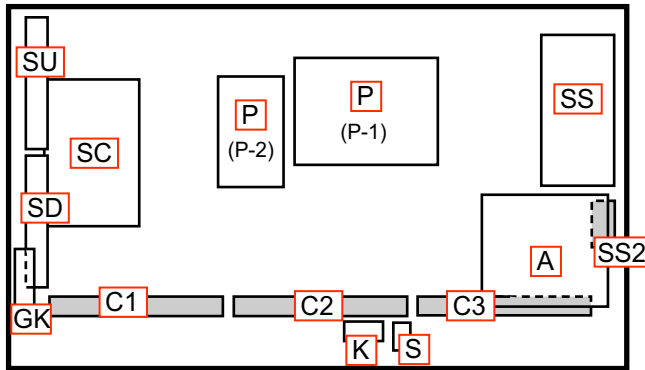


Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFF
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01HMUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
GL	SD LED	TXNGL1HMUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11HMUM
C2	Data Driver (Lower Left)	TXNC21HMUM
SC	Scan Drive	TXNSC1HMUM
SS	Sustain Drive	TXNSS1HMUM
SS2	Sustain out (Lower)	TXNSS21HMUM
SU	Scan out (Upper), Not repairable. SU-Board should be exchanged for service.	TXNSU1HMUM
SD	Scan out (Lower), Not repairable. SD-Board should be exchanged for service.	TXNSD1HMUM

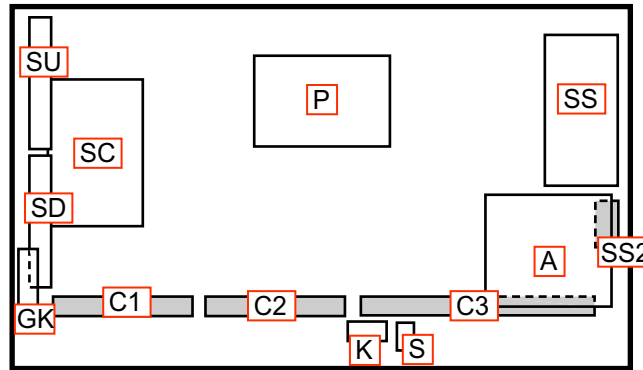
2. PCB Location & Function

S10 Series

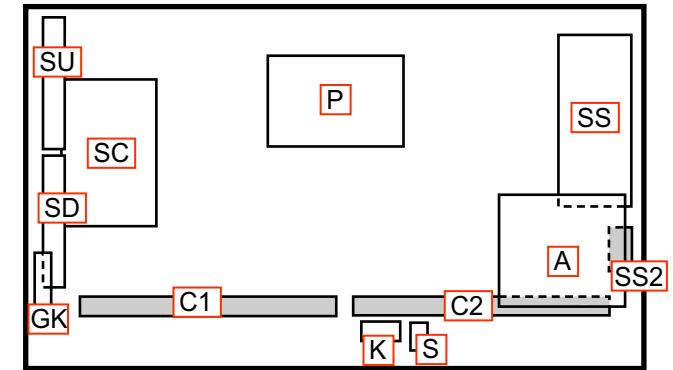
TH-P54S10M



TH-P50S10M



TH-P42S10M



Board Name	Function	Parts Number
P	Power Supply	ETX2MM761MGN
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01ECUY
K	Remote receiver, Power LED, C.A.T.S sensor	TNPA4857AC
S	Power Switch	TNPA4858AB
GK	Key Switch	TNPA4875AB
C1	Data Driver (Lower Right)	TNPA4770
C2	Data Driver (Lower Center)	TNPA4771
C3	Data Driver (Lower Left)	TNPA4772
SC	Scan Drive	TNPA4844AM
SS	Sustain Drive	TNPA4783AM
SS2	Sustain out (Lower)	TNPA4804
SU	Scan out (Upper), Not repairable. SU-Board should be exchanged for service.	TNPA4790
SD	Scan out (Lower), Not repairable. SD-Board should be exchanged for service.	TNPA4791

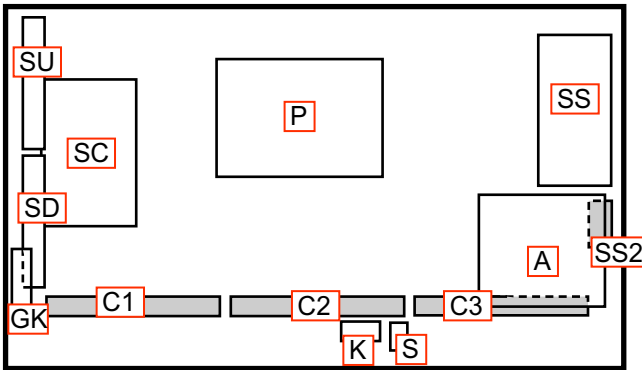
Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFG
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01HVUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11HVUM
C2	Data Driver (Lower Center)	TXNC21HVUM
C3	Data Driver (Lower Left)	TXNC31HVUM
SC	Scan Drive	TXNSC1HVUM
SS	Sustain Drive	TXNSS1HVUM
SS2	Sustain out (Lower)	TXNSS21HVUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1HVUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1HVUM

Board Name	Function	Parts Number
P	Power Supply	ETX2MM747MFE
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, PC, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-AVC, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01EFUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11HMUM
C2	Data Driver (Lower Left)	TXNC21HMUM
SC	Scan Drive	TXNSC1EFUM
SS	Sustain Drive	TXNSS1EFUM
SS2	Sustain out (Lower)	TXNSS21HMUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1HMUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1HMUM

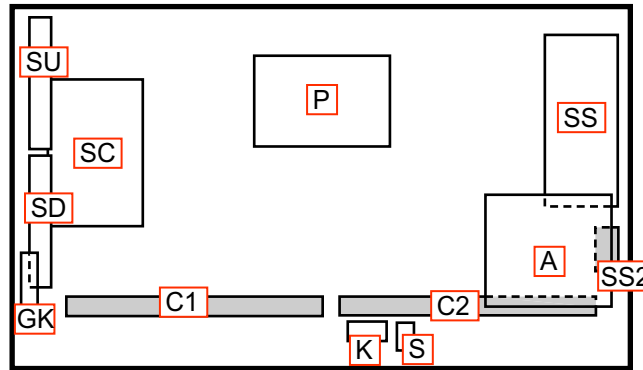
2. PCB Location & Function

X10 Series

TH-P50X10M



TH-P42X10M



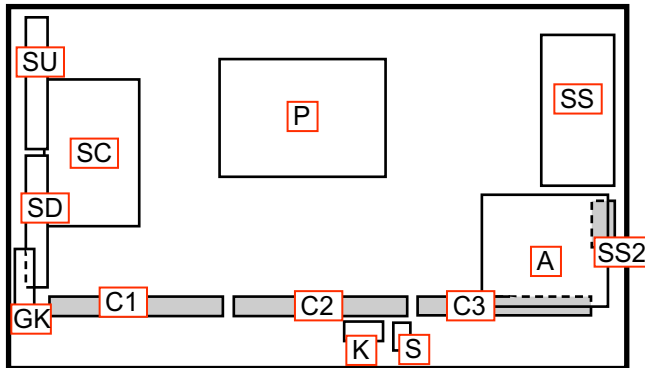
Board Name	Function	Parts Number
P	Power Supply	LSEP1279WTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01EPUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EPUM
C2	Data Driver (Lower Center)	TXNC21EPUM
C3	Data Driver (Lower Left)	TXNC31EPUM
SC	Scan Drive	TXNSC1EPUM
SS	Sustain Drive	TXNSS1EPUM
SS2	Sustain out (Lower)	TXNSS21EPUM
SU	Scan out (Upper), Not repairable. SU-Board should be exchanged for service.	TXNSU1EPUM
SD	Scan out (Lower), Not repairable. SD-Board should be exchanged for service.	TXNSD1EPUM

Board Name	Function	Parts Number
P	Power Supply	LSEP1279MTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01EQUM
K	Remote receiver, Power LED, C.A.T.S sensor	TXN/K1EQUM
S	Power Switch	TXN/S1EQUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EQUM
C2	Data Driver (Lower Left)	TXNC21EQUM
SC	Scan Drive	TXNSC1EQUM
SS	Sustain Drive	TXNSS1EQUM
SS2	Sustain out (Lower)	TXNSS21EQUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1EQUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1EQUM

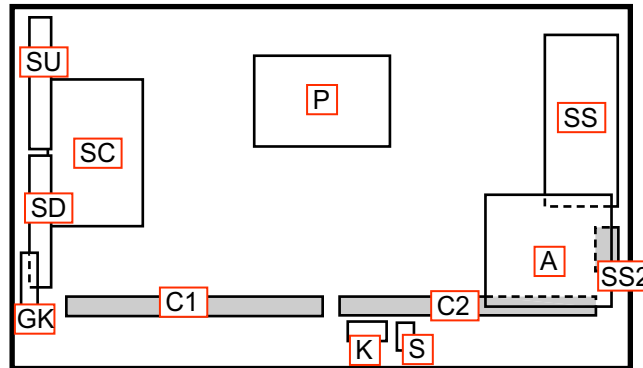
2. PCB Location & Function

C10 Series

TH-P50C10M



TH-P42C10M



Board Name	Function	Parts Number
P	Power Supply	LSEP1279WTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01ESUM
K	Remote receiver, Power LED	TXN/K1ETUM
S	Power Switch	TXN/S1ETUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EPUM
C2	Data Driver (Lower Center)	TXNC21EPUM
C3	Data Driver (Lower Left)	TXNC31EPUM
SC	Scan Drive	TXNSC1EPUM
SS	Sustain Drive	TXNSS1EPUM
SS2	Sustain out (Lower)	TXNSS21EPUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1EPUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1EPUM

Board Name	Function	Parts Number
P	Power Supply	LSEP1279MTHB
A	DC-DC Converter, Tuner, Speaker out, AV Terminal, AV Switch, Digital Signal Processor, SYSTEM MPU, HDMI Switch, Peaks-lite2p, Format Converter, Plasma AI, Sub-Field Processor	TZTNP01ETUM
K	Remote receiver, Power LED	TXN/K1ETUM
S	Power Switch	TXN/S1ETUM
GK	Key Switch	TXNGK1EQUM
C1	Data Driver (Lower Right)	TXNC11EQUM
C2	Data Driver (Lower Left)	TXNC21EQUM
—	—	—
SC	Scan Drive	TXNSC1EQUM
SS	Sustain Drive	TXNSS1EQUM
SS2	Sustain out (Lower)	TXNSS21EQUM
SU	Scan out (Upper),Not repairable. SU-Board should be exchanged for service.	TXNSU1EQUM
SD	Scan out (Lower),Not repairable. SD-Board should be exchanged for service.	TXNSD1EQUM

3. PCB List

3. PCB List

	V10 series			G10 series	S10 series			X10 series		C10 series	
Board	TH-P65V10M	TH-P58V10M	TH-P50V10M	TH-P42G10M	TH-P54S10M	TH-P50S10M	TH-P42S10M	TH-P50X10M	TH-P42X10M	TH-P50C10M	TH-P42C10M
P(SUS)	ETX2MM774MG	ETX2MM774MF	ETX2MM747MFK	ETX2MM747MFF	ETX2MM761MGN	ETX2MM747MFG	ETX2MM747MFE	LSEP1279WTHB	LSEP1279MTHB	LSEP1279WTHB	LSEP1279MTHB
P(MULTI)	ETX2MM774MA	ETX2MM774MA	----	----	----	----	----	----	----	----	----
A	TXN/A1DRUM	TXN/A1DRUM	TXN/A1DRUM	TZTNP01HMUM	TZTNP01ECUY	TZTNP01HVUM	TZTNP01EFUM	TZTNP01EPUM	TZTNP01EQUM	TZTNP01ESUM	TZTNP01ETUM
D	TZTNP02DNUM	TZTNP02DPUM	TZTNP02DRUM	----	----	----	----	----	----	----	----
K	TNPA4857AC	TNPA4857AC	TNPA4857AC	TXN/K1EQUM	TNPA4857AC	TXN/K1EQUM	TXN/K1EQUM	TXN/K1EQUM	TXN/K1EQUM	TXN/K1ETUM	TXN/K1ETUM
S	TNPA4858AB	TNPA4858AB	TNPA4858AB	TXN/S1EQUM	TNPA4858AB	TXN/S1EQUM	TXN/S1EQUM	TXN/S1EQUM	TXN/S1EQUM	TXN/S1ETUM	TXN/S1ETUM
GK	TNPA4875AB	TXNGK1DRUM	TXNGK1DRUM	TXNGK1EQUM	TNPA4875AB	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM	TXNGK1EQUM
GL	TNPA4693AB	TNPA4693AB	TNPA4693AB	TXNGL1HMUM	----	----	----	----	----	----	----
C1	TNPA4990	TNPA4987	TNPA4767	TXNC11HMUM	TNPA4770	TXNC11HVUM	TXNC11HMUM	TXNC11EPUM	TXNC11EQUM	TXNC11EPUM	TXNC11EQUM
C2	TNPA4991	TNPA4988	TNPA4768	TXNC21HMUM	TNPA4771	TXNC21HVUM	TXNC21HMUM	TXNC21EPUM	TXNC21EQUM	TXNC21EPUM	TXNC21EQUM
C3	TNPA4992	TNPA4989	TNPA4769	----	TNPA4772	TXNC31HVUM	----	TXNC31EPUM	----	TXNC31EPUM	----
SC	TXNSC1DNUJ	TXNSC1DPUJ	TNPA4782AF	TXNSC1HMUM	TNPA4844AM	TXNSC1HVUM	TXNSC1EFUM	TXNSC1EPUM	TXNSC1EQUM	TXNSC1EPUM	TXNSC1EQUM
SS	TXNSS1DNUJ	TXNSS1DPUJ	TNPA4783AF	TXNSS1HMUM	TNPA4783AM	TXNSS1HVUM	TXNSS1EFUM	TXNSS1EPUM	TXNSS1EQUM	TXNSS1EPUM	TXNSS1EQUM
SS2	TNPA4983	TNPA4980	TNPA4804	TXNSS21HMUM	TNPA4804	TXNSS21HVUM	TXNSS21HMUM	TXNSS21EPUM	TXNSS21EQUM	TXNSS21EPUM	TXNSS21EQUM
SS3	TNPA4984	----	----	----	----	----	----	----	----	----	----
SU	TNPA4981	TNPA4976	TNPA4788	TXNSU1HMUM	TNPA4790	TXNSU1HVUM	TXNSU1HMUM	TXNSU1EPUM	TXNSU1EQUM	TXNSU1EPUM	TXNSU1EQUM
SD	TNPA4982	TNPA4977	TNPA4789	TXNSD1HMUM	TNPA4791	TXNSD1HVUM	TXNSD1HMUM	TXNSD1EPUM	TXNSD1EQUM	TXNSD1EPUM	TXNSD1EQUM

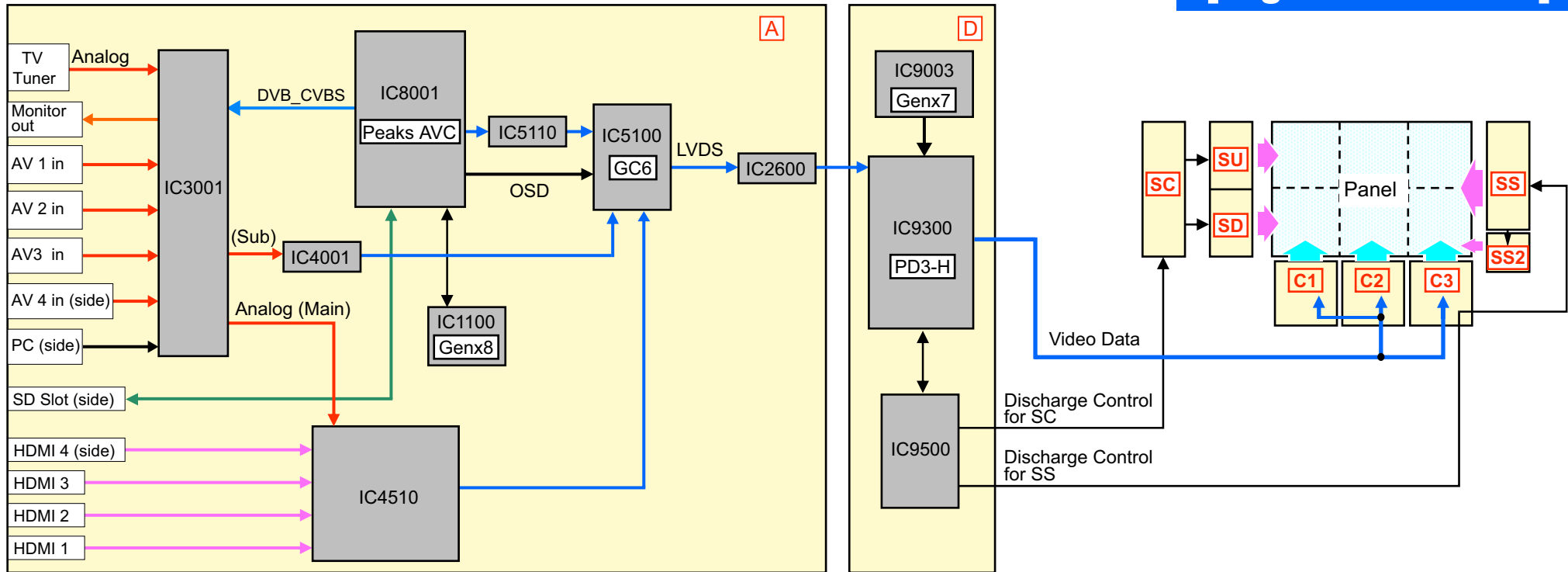
4. Block Diagram

4. Block Diagram

Signal Processing Circuit (1) V10 Series

<PCB Function>

[e.g. TH-P50V10M]



IC3001
: AV Switch
IC4001
: GC3FS next

IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks AVC (MAIN MPU+VIDEO PROCESSOR)
IC5110
: LVDS RX
IC5100
: GC6
Video Processor IC (Format Converter)
LVDS Transmitter
IC2600
: FRC-Q
IC1100
: Genx8 (SYSTEM MPU)

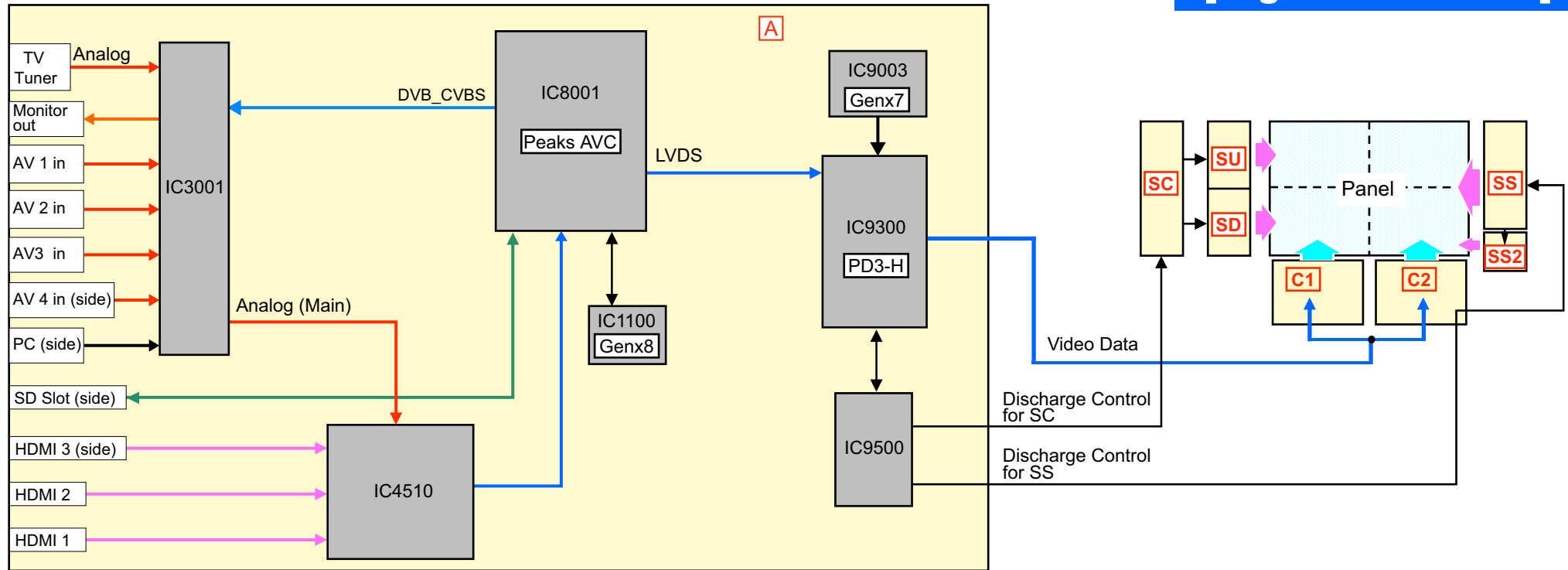
IC9300
: PD3-H
LVDS Receiver,
Sub Field Processor,
Data Driver Processor
Plasma AI
IC9500
: FPGA (Discharge Control)
IC9003
: Genx7 (Panel Micom)

4. Block Diagram

Signal Processing Circuit (2) G10 Series

<PCB Function>

[e.g. TH-P42G10M]



IC3001
: AV Switch

IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks AVC (MAIN MPU+VIDEO PROCESSOR)

IC1100
: Genx8 (SYSTEM MPU)

IC9300
: PD3-H
[LVDS Receiver,
Sub Field Processor,
Data Driver Processor
Plasma AI]

IC9500
: FPGA (Discharge Control)

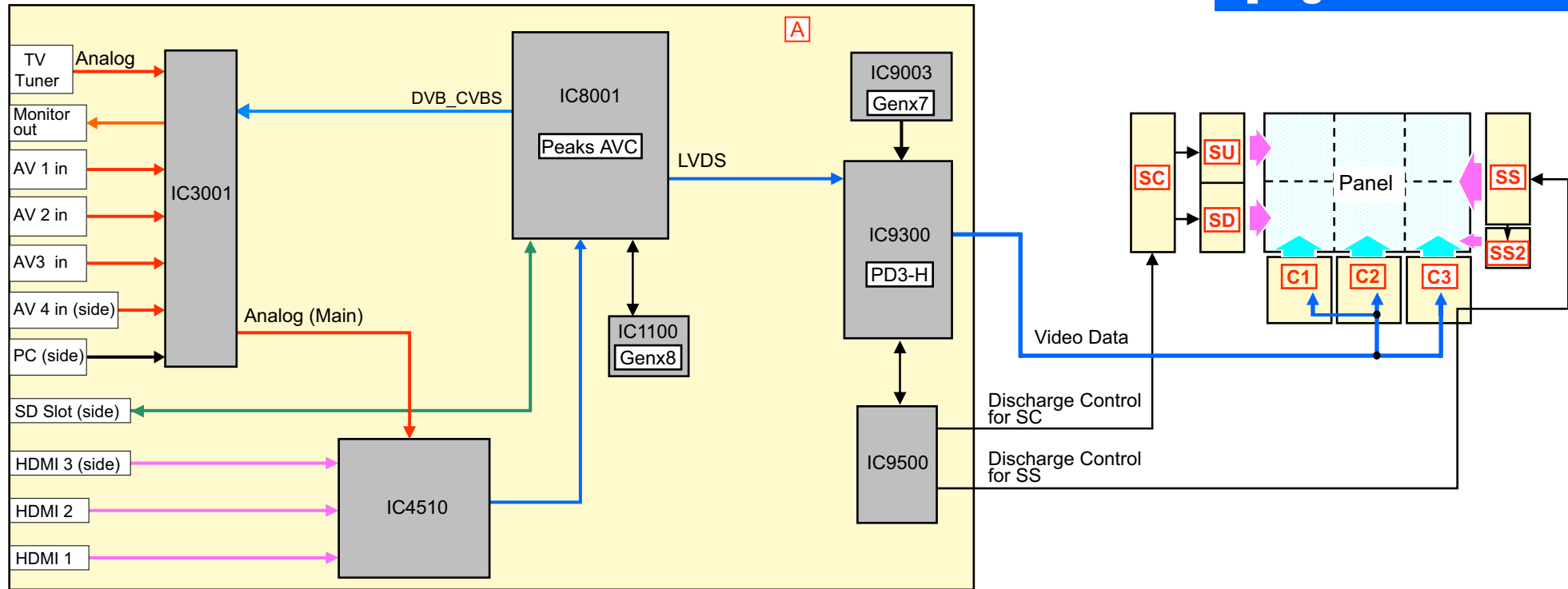
IC9003
: Genx7 (Panel Micom)

4.Block Diagram

Signal Processing Circuit (3) S10 Series

<PCB Function>

[e.g. TH-P50S10M]



IC3001
: AV Switch

IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks AVC (MAIN MPU+VIDEO PROCESSOR)

IC1100
: Genx8 (SYSTEM MPU)

IC9300
: PD3-H
LVDS Receiver,
Sub Field Processor,
Data Driver Processor
Plasma AI

IC9500
: FPGA (Discharge Control)

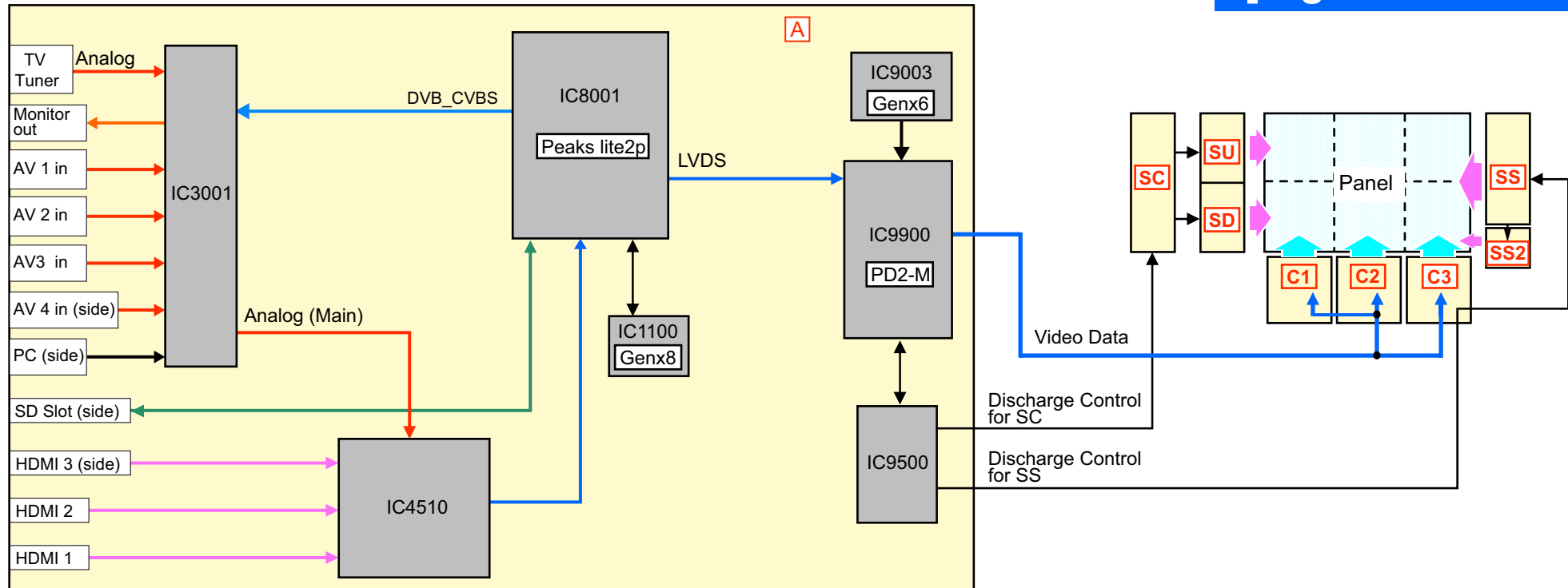
IC9003
: Genx7 (Panel Micom)

4. Block Diagram

Signal Processing Circuit (4) X10 Series

<PCB Function>

[e.g. TH-P50X10M]



IC3001
: AV Switch

IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks lite2p
(MAIN MPU+VIDEO PROCESSOR)
IC1100
: Genx8 (SYSTEM MPU)

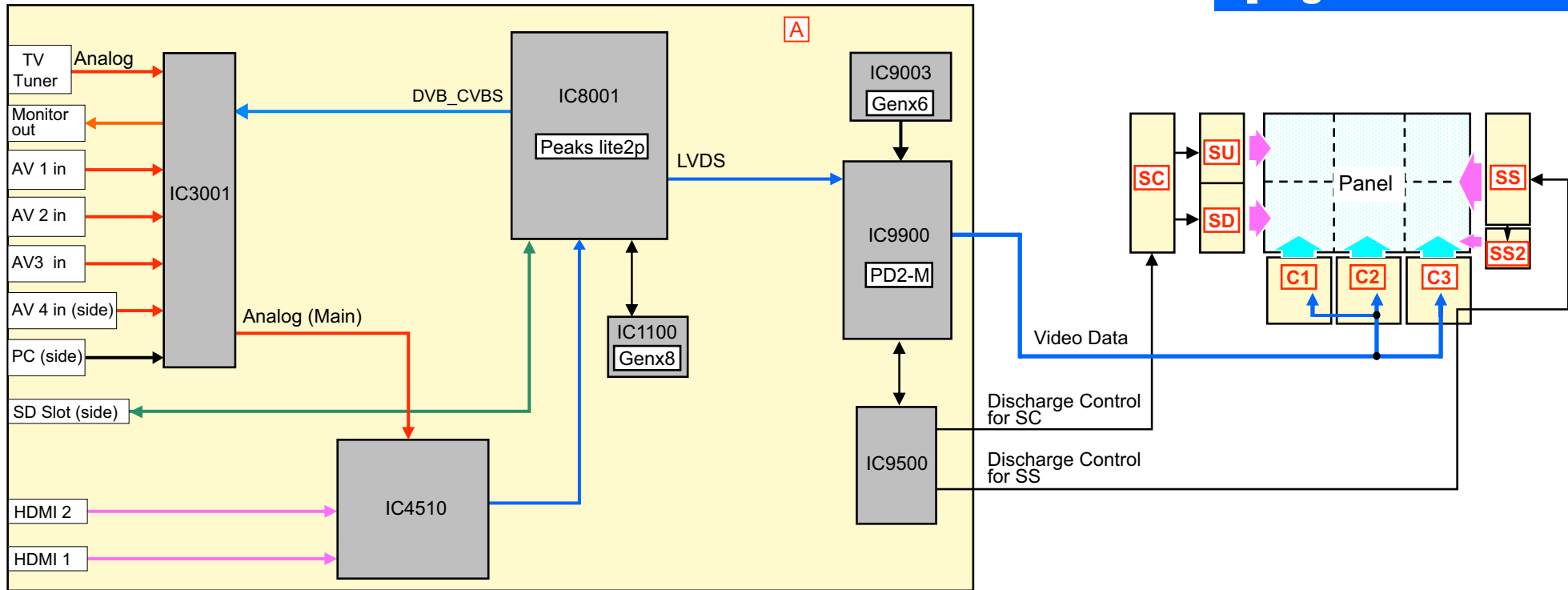
IC9900
: PD2-M
[LVDS Receiver,
Sub Field Processor,
Data Driver Processor
Plasma AI]
IC9500
: FPGA (Discharge Control)
IC9003
: Genx6 (Panel Micom)

4. Block Diagram

Signal Processing Circuit (5) C10 Series

<PCB Function>

[e.g. TH-P50C10M]



IC3001
: AV Switch

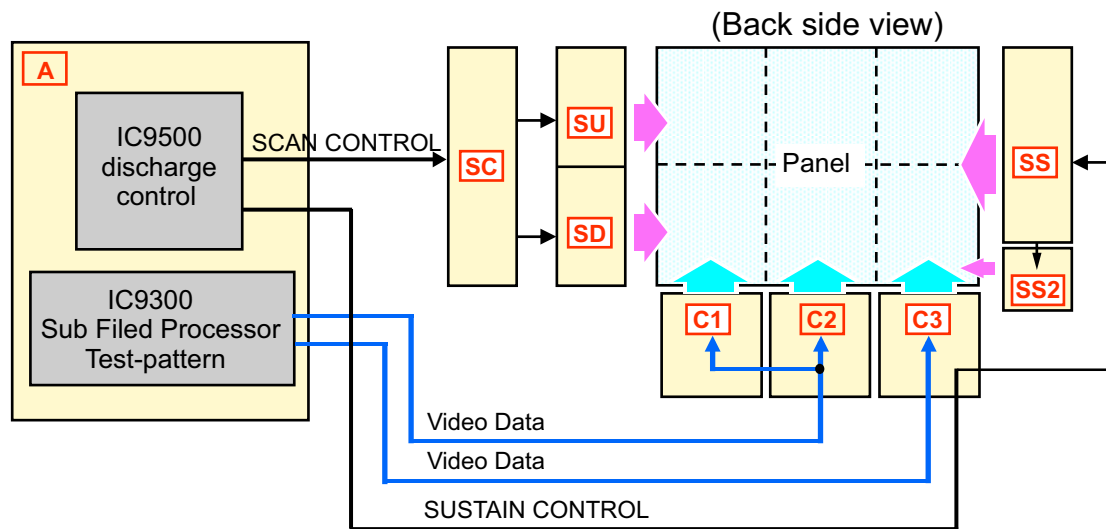
IC4510
: HDMI I/F, 10bit A/D
IC8001
: Peaks lite2p
(MAIN MPU+VIDEO PROCESSOR)
IC1100
: Genx8 (SYSTEM MPU)

IC9900
: PD2-M
[LVDS Receiver,
Sub Field Processor,
Data Driver Processor
Plasma AI]
IC9500
: FPGA (Discharge Control)
IC9003
: Genx6 (Panel Micom)

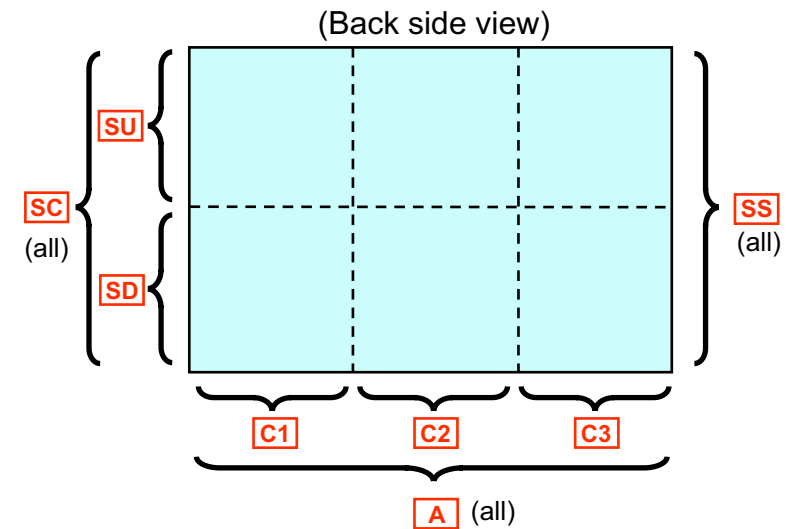
5. Troubleshooting

We know the possible defective board by picture trouble area.

<Display device block diagram>



<Relation of defective board and picture trouble area >



* In case of V10 series, A board change to D board.

5.Troubleshooting for picture trouble

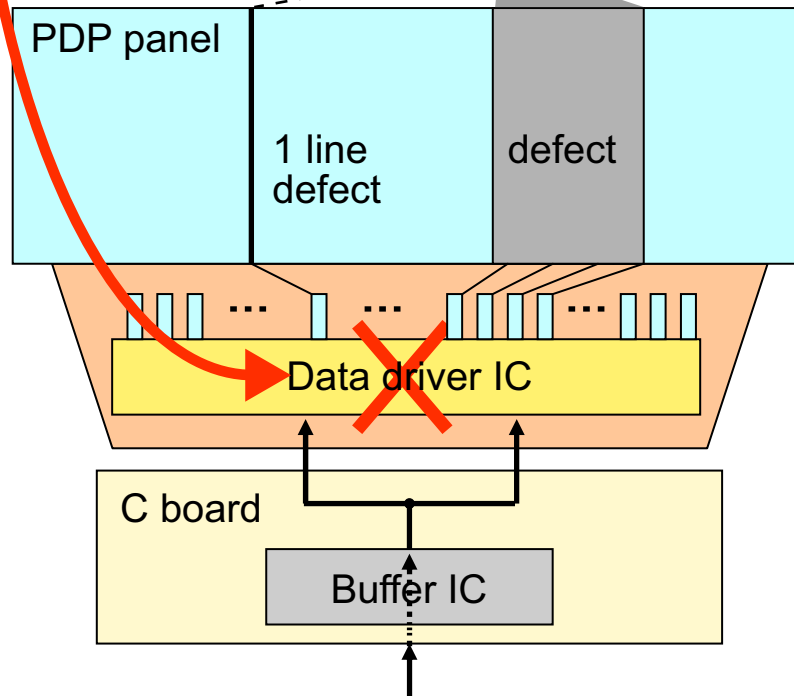
Picture trouble (diagnosis of vertical line)

PDP panel defective (Data driver IC defective)

Width is narrower than FPC

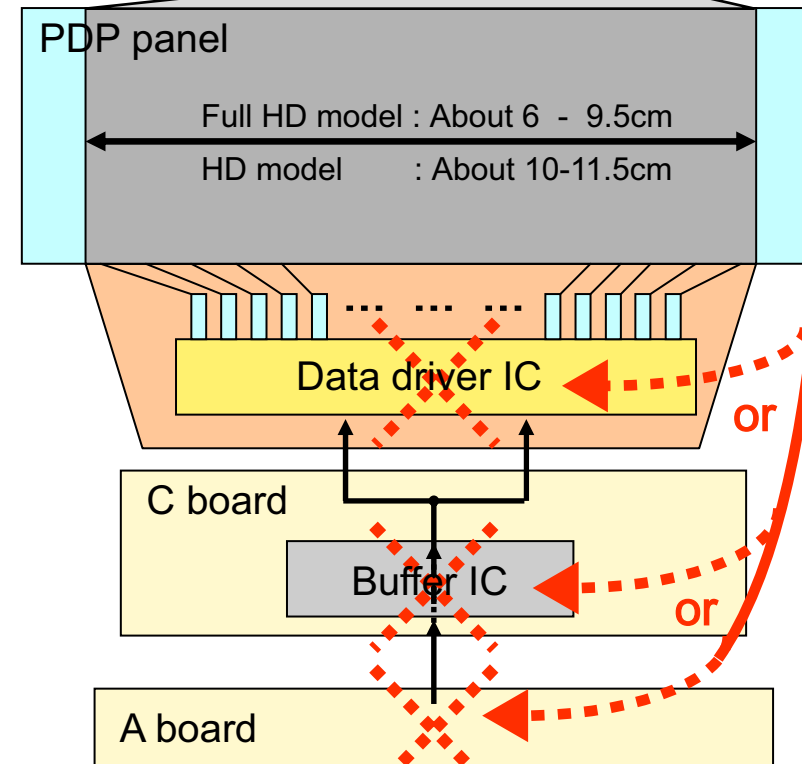


Data driver IC defect= PDP panel defect



Data driver IC or C or A board defective

Width is same as FPC

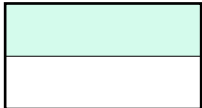
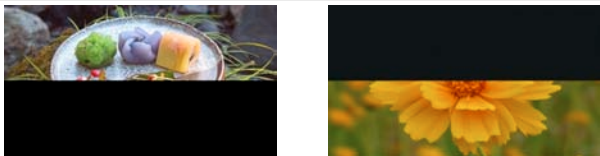

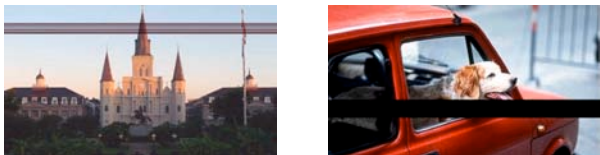
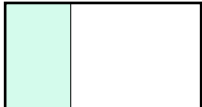

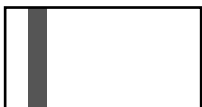
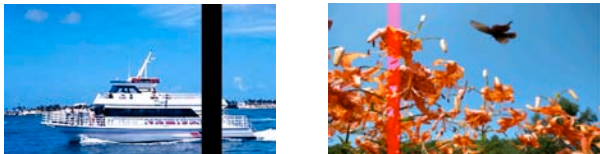

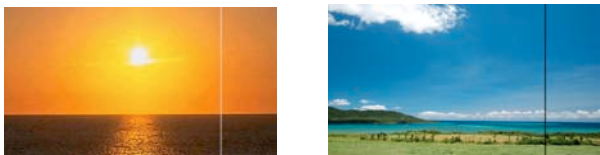

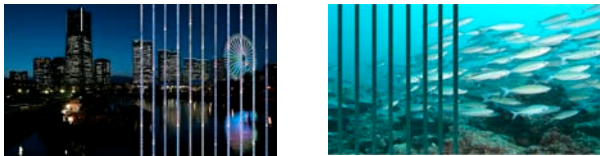


* In case of V10/G15 series, A board change to D board.

5.Troubleshooting for picture trouble

Summary of picture trouble

< Some part of screen >


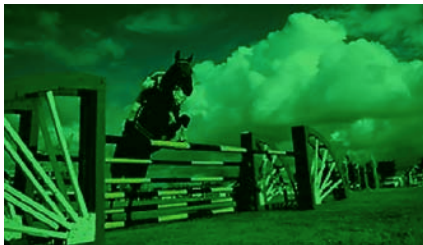



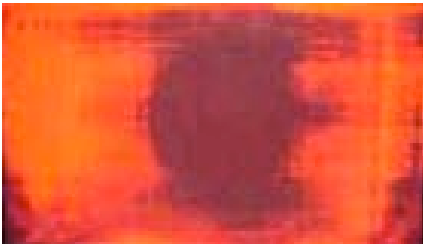

Symptom	Actual symptom	Defective board
Trouble at Upper or Lower half 		SU / SD board
Horizontal line (Upper or Lower side) 		SU / SD board or PDP panel
Trouble at Left or Center or Right part (42 inch : Left or Right half) 		C1-C3 board (42 inch : C1,C2)
Vertical line (Width is same as FPC) 		C or A board or PDP panel * In case of V10 series , A board change to D board.
Vertical line (Width is narrower than FPC) 		PDP panel
Regular bar (*1) 		A board * In case of V10 series , defective board is A board or D board.

(*1) In case of V10 series, we can judge A-board or D-board is failure by using Test Pattern.
Please refer to Page 24, 25.

5.Troubleshooting for picture trouble

Summary of picture trouble

< All area of screen >

Symptom	Actual symptom		Defective board
Irregular Color (*1)			A board * In case of V10 series , defective board is A board or D board.
All vertical line (*1)			A board * In case of V10 series , defective board is A board or D board.
Abnormal electric discharge	 		SC / SS board

(*1) In case of V10 series, we can judge A-board or D-board is failure by using Test Pattern.
Please refer to Page 24, 25.

<Purpose>

Test pattern is helpful to find the defective parts.

For example, if we can see the picture problem at all over the screen (Picture Noise, Full Vertical Line, Abnormal color), we can find signal processing problem or panel phosphor problem by using test pattern.

<Model>

PDP 2009 Models

(V10,G10,S10,X10,C10 series)

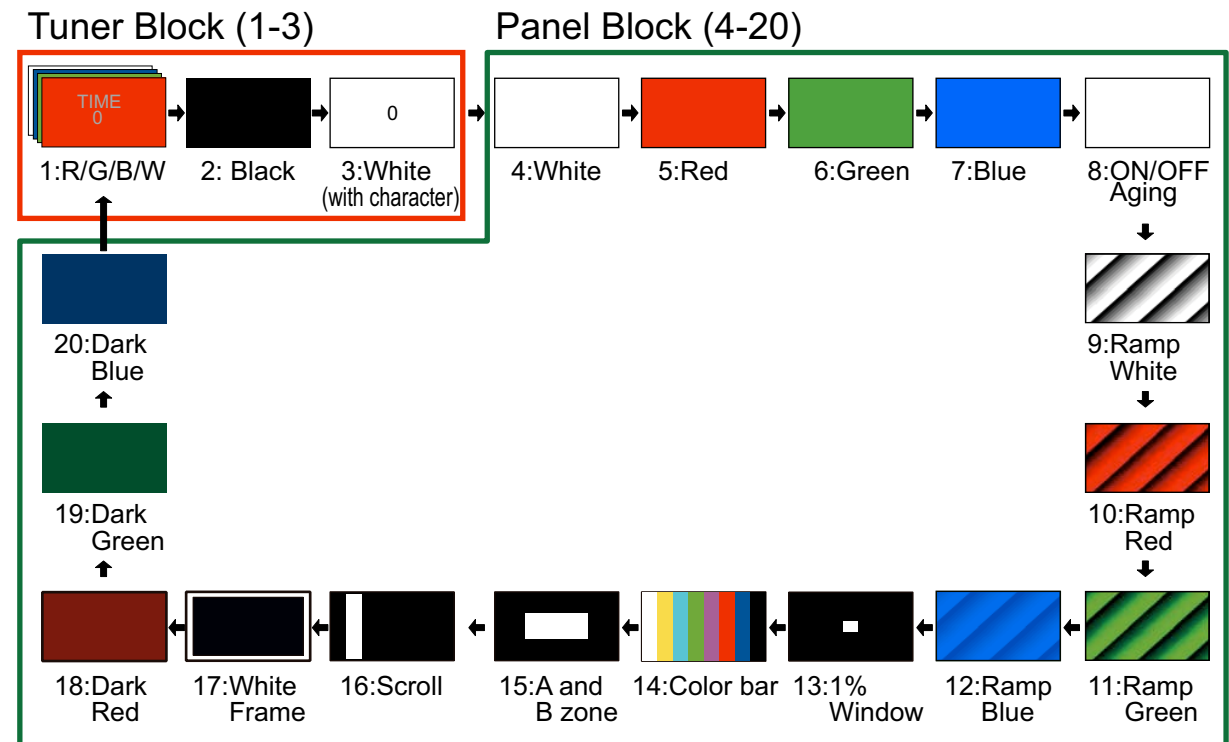
<Symptom>

Picture Noise, Full Vertical Line,
Abnormal color

<How to enter the Test Pattern>

1. While pressing “**VOLUME (-)**” button of the main unit, press “**RECALL**” button of the remote control three times within 2 seconds.
2. Push button “**1**” of Remote Controller several times, and select “**Aging**” setting, then “**Test pattern**” will appear.
3. Push “**3**” button of Remote Controller to select the test pattern mode to forward.
4. Push “**4**” button of Remote Controller to select the test pattern mode to reverse.

<Test Pattern (Normal)>



<Diagnosis>

How to diagnose by using test pattern.

Abnormal picture
(Picture Noise, Full Vertical Line, Abnormal color)

(1) In case of V10 series

Test pattern (4-20)	Defective Block [Board]
Abnormal	Panel Block [D (SC/SS) Board]
Normal	Tuner Block [A Board]

(2) In case of G10/S10/X10/C10 series

Test pattern (4-20)	Defective Block [Board]
Abnormal	Panel Block [A (SC/SS) Board]
Normal	Tuner Block [A Board]

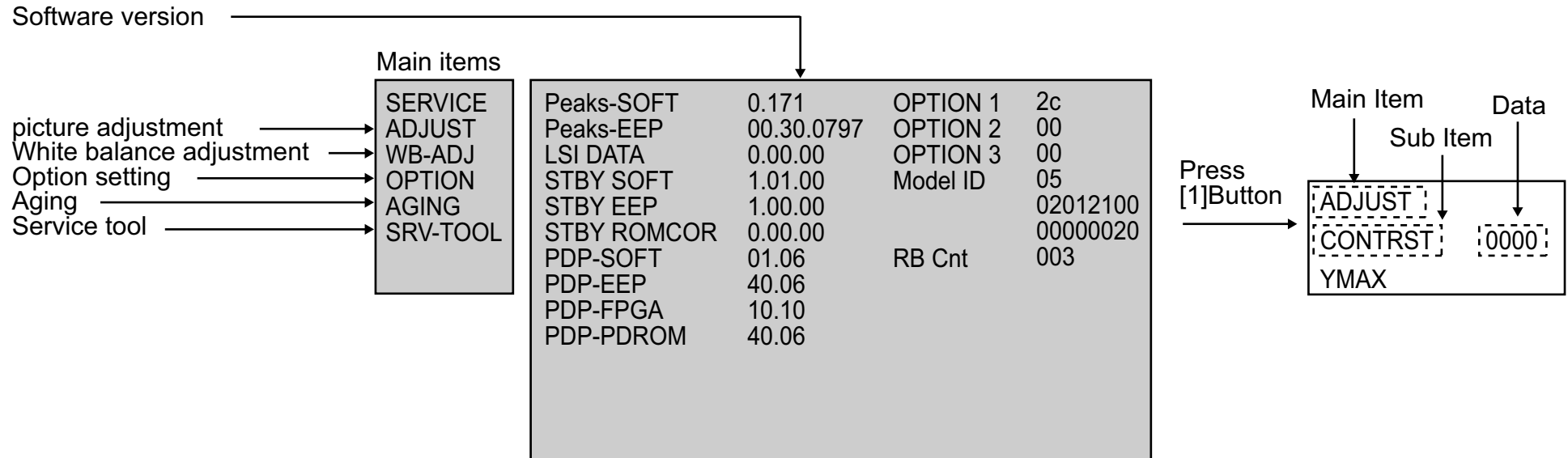
6. Service Information

6. Service Information

(1) Service Mode (1/2)

<How to enter into Service Mode>

While pressing [VOLUME (-)] button of the main unit, press [RECALL] button of the remote control three times within 2 seconds.



Key command

[1] button...Main items Selection in forward direction

[2] button...Main items Selection in reverse direction

[3] button...Sub items Selection in forward direction

[4] button...Sub items Selection in reverse direction

[VOL] button...Value of sub items change in forward direction (+), in reverse direction (-)

Press [OK] to memorize the value.

6. Service Information

(1) Service Mode (2/2)

<Service tool mode>

How to access

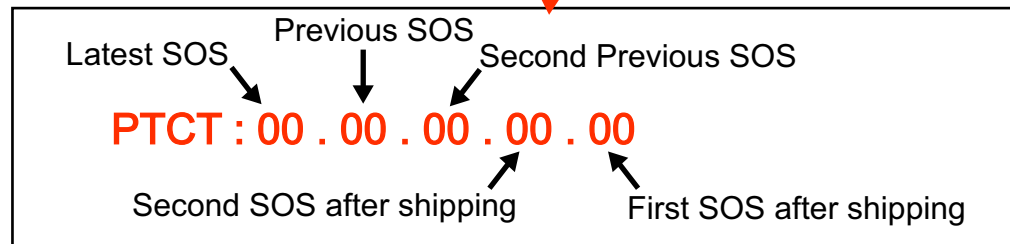
1. Select [SRV-TOOL] in Service Mode.
2. Press [OK] button on the remote control.

	SRV-TOOL	
Display of TD2Microcode version →	TD2Microcode:81c0000e	
Display of Flash ROM maker code →	Flash ROM : 1-227E	
Display of SOS History →	PTCT : 00.00.00.00.00	Time 00000:40 On/Off 00000221

POWER ON TIME, On/Off display position

Display of SOS History

SOS History (Number of LED blinking) indication.



POWER ON TIME, On/Off

Move the cursor to right low position and press [MUTE] button for 3sec.

Time	<u>00000</u> : <u>40</u>	On/Off	00000221
	Hour Minute		times

Note : This indication will not be cleared by either of the self-check or any command.

Exit

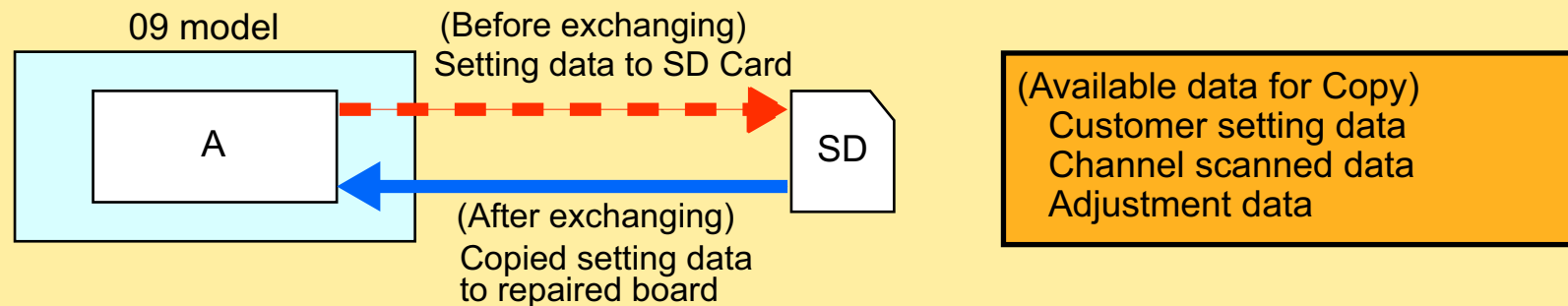
1. Disconnect the AC cord from wall outlet or switch off the power with the [POWER] button on the main unit.

<From TV set to SD card>

There are two purposes.

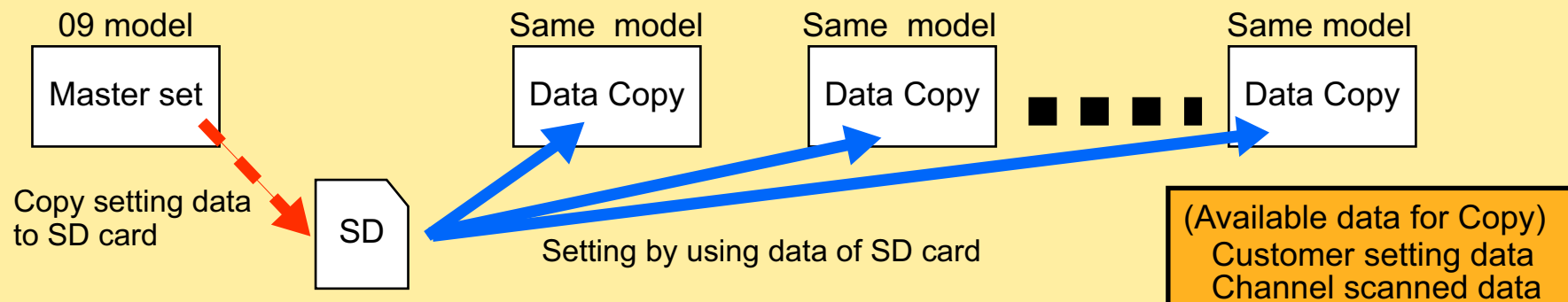
(a) Copy of setting data when exchanging repair board (A board)

When exchanging repair board customer setting data channel scanned data, and adjustment data before exchanging board data in TV is copied to SD card, and after exchanging repair board copied data in SD card can be copied to TV.



(b) Copy of hotel mode setting data

When hotel mode setting customer setting data, and channel scanned data of master set is copied to SD card, and to same models by using SD card data of master set is copied to many same models.



<From TV set to SD card>

[Preparation]

Make pwd file of (a) or (b) in SD card.

(Make new (empty) text file and change file name.)

	[pwd File name]
(a) For exchanging repair board	boardreplace.pwd
(b) For hotel mode setting	hotel.pwd

Note : Please make only 1 file ,for preventing operation error.

When making pwd file large letters should not be used.

<Steps of Data Copy to SD card (TV set → SD card)>

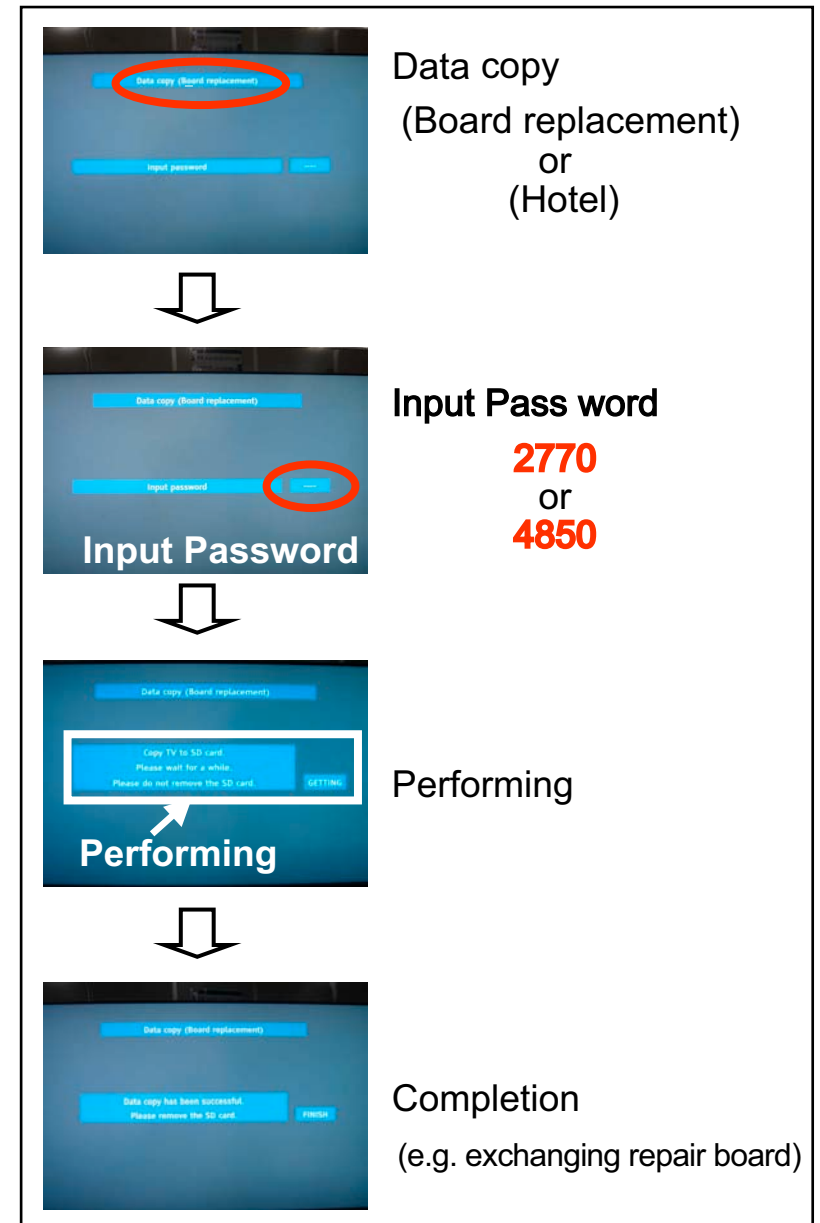
1. Power On TV set.
2. Insert SD card with pwd file to SD slot.
3. Automatically, Data Copy display will appear.
4. **Input Pass word** for Data copy to SD card by using remote control.

[Password for Data Copy]

(a) For exchanging repair board - - - - **2770**

(b) For hotel mode setting - - - - **4850**

5. Perform Data copy to SD card.
Information for reference
Time for Data copy (TV → SD card)
Euro/Asia model - - - - 90 seconds max.
6. End of Data copy to SD card
After the completion display of
Data Copy appear, pull out SD card.
Even if SD card is not pulled out, the display
will appear automatically.
Power Off TV set.
7. How to confirm Copy data
File data can be confirmed by PC.
When the following folder exists, data is pulled out.
Folder Name : (a) For exchanging repair boards - - - - **user_setup**
(After writing data, data is deleted.)
(b) For hotel mode setting - - - - **hotel**
(After writing data, data is not deleted.)



<Steps of Data Copy to TV set>

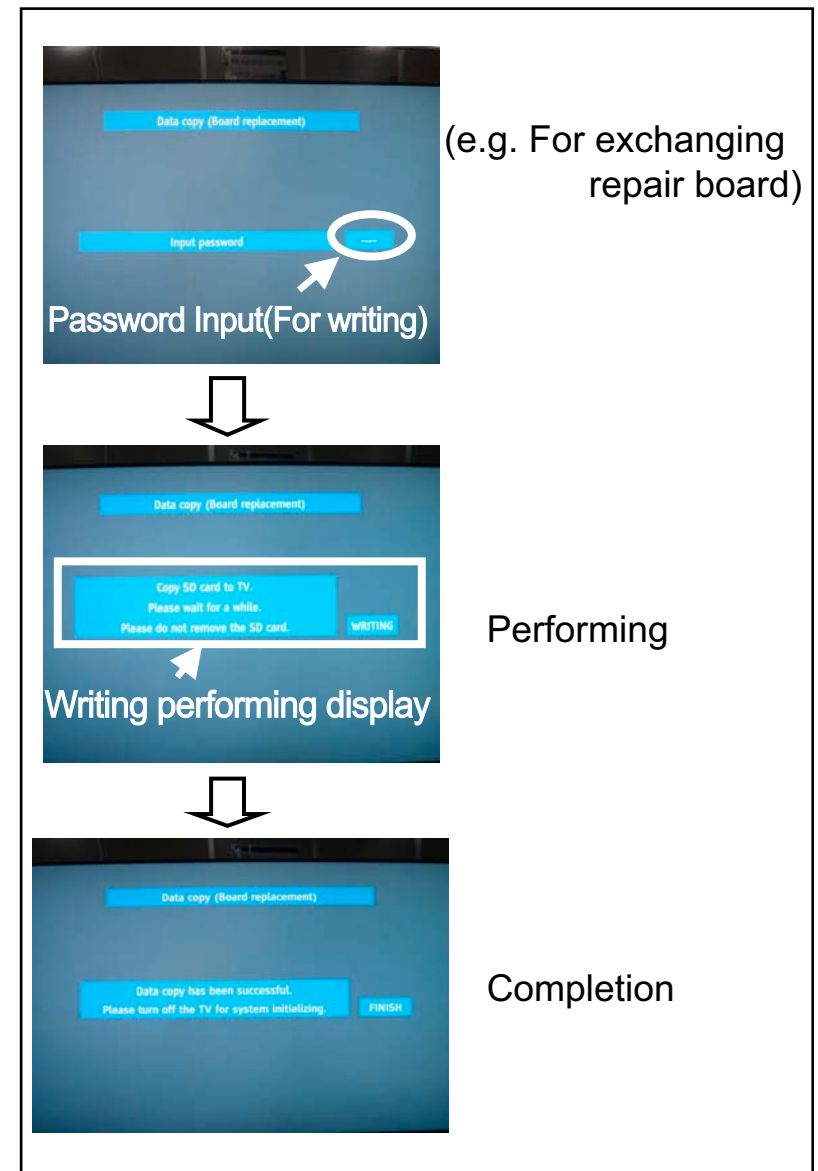
1. Power On TV set.
2. Insert SD card with Data to SD slot.
3. Automatically, Data Copy display will appear.
4. **Input Pass word** for Data copy to TV set by using remote control.

[Password for Data Copy]

- (a) For exchanging repair board - - - - 2771
 (b) For hotel mode setting - - - - 4851

5. Perform Data copy to TV set.
6. Completion of Data to TV set.
Completion of data Copy is displayed.
7. Pull out SD card.
Power OFF/ON by main switch.

Note: 1. Depending on the trouble of boards, function of Data copy for exchanging repair boards does not always work.
 2. This function does not work with other model numbers.



<Check of the IIC bus lines>

1. How to access

Self-check indication only :

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [OK] button on the remote control for more than 3 seconds.

Self-check indication and forced to factory shipment setting :

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [MENU] button on the remote control for more than 3 seconds.

Exit :

Disconnect the AC cord from wall outlet or switch off the power with the [POWER] button on the main unit.

2. Screen display & Check Point

(1) < V10 Series > Screen display

_FHD SET		Panasonic 2009PDP	
SELF CHECK COMPLETE			
ADV	OK	PEAKS-SOFT	0.171
ADAV	OK	PEAKS-EEP	00.30.07 97
TUN	OK	GENX-SOFT	1.01.00
GENX	OK	GENX-EEP	1.00.00
MEM1	OK	GENX-ROMCOR	0.00.00
MEM2	OK	PDP-MCU	01.06
AVSW	OK	PDP-EEP	40.06
GC3FS	OK	PDP-FPGA	10.10
PDP-PANEL	OK	PDP-PDPOM	40.06
TEMP	OK	FRC-EEP	00.10.00 00
FRC	OK		
GC6	OK		
SUM			1f40
Model ID			05
			02012100
			00000020
EDID			ab 0515e5--

Check Point

Confirm the following parts if NG was displayed.

Display	Ref.No.	Description	P.C.B
ADV	IC4510	AD/HDMI	A-Board
ADAV	IC4510	Sound Processor	A-Board
TUN	TU2901	Tuner	A-Board
GENX	IC1100	GenX (STB MCU)	A-Board
MEM1	IC1101	EEPROM (GenX)	A-Board
MEM2	IC8502	EPPROM (Peaks)	A-Board
AVSW	IC3001	Audio/Video SW	A-Board
GC3FS	IC4001	Global core sub	A-Board
PDP-PANEL	IC9003	MICOM	D-Board
TEMP	IC1000	Temp Sensor	A-Board
RFC	IC2600	Frame rate converter	A-Board
GC6	IC5100	Global core	A-Board

6. Service Information

(3) Self-Check (2/2)

<Check of the IIC bus lines>

2.Screen display & Check Point

(2) < G10/S10/X10/C10 Series > Screen display

_FHD SET		Panasonic 2009PDP	
SELF CHECK COMPLETE			
ADV	OK	PEAKS-SOFT	0.171
ADAV	OK	PEAKS-EEP	00.30.0797
TUN	OK	GENX-SOFT	1.01.00
GENX	OK	GENX-EEP	1.00.00
MEM1	OK	GENX-ROMCOR	0.00.00
MEM2	OK	PDP-MCU	01.06
AVSW	OK	PDP-EEP	40.06
PDP-PANEL	OK	PDP-FPGA	10.10
TEMP	OK	PDP-PDPOM	40.06
		SUM	1f40
		Model ID	05
			02012100
			00000020
		EDID	ab 0515e5--

Check Point

Confirm the following parts if NG was displayed.

Display	Ref.No.	Description	P.C.B
ADV	IC4510	AD/HDMI	A-Board
ADAV	IC4510	Sound Processor	A-Board
TUN	TU2901	Tuner	A-Board
GENX	IC1100	GenX (STB MCU)	A-Board
MEM1	IC1101	EEPROM (GenX)	A-Board
MEM2	IC8502 (G10 series) (S10 series) (X10 series) IC8601 (C10 series)	EPPROM (Peaks)	A-Board
AVSW	IC3001	Audio/Video SW	A-Board
PDP-PANEL	IC9003	MICOM	A-Board
TEMP	IC1000	Temp Sensor	A-Board

<Contents>

By using this function, even in the case of blackout, the results of Self Check can be confirmed.

<Available models>

2009 PDP models

<Steps>

1. Power on of TV set and insert the SD card. (**Starting file is not necessary.**)
2. After inserting SD card, perform Self Check according the method of Service Manual. (refer to page 33)
3. After the completion of Self Check, log file of results is automatically made.

File name is selfcheck.log.

If selfcheck.log is already in SD card, results are overwritten.

Note: For PAL models, when self check is performed with inserting SD card and results of Self check are OK, "SELF CHECK FAILED" is displayed.

42FHD SET

Panasonic 2009PDP

SELF CHECK FAILED

ADVOK

ADAVOK

TUNOK

GENXOK

MEM1OK

MEM2OK

AVSWOK

PDP-PANELOK

TEMPOK

PEAKS-SOFT0.171

PEAKS-EEP00.30.07 97

GENX-SOFT1.01.00

GENX-EEP1.00.00

GENX-ROMCOR0.00.00

PDP-MCU01.06

PDP-EEP40.06

PDP-FPGA10.10

PDP-PDROM40.06

SUM1f40

Model ID05

02012100

00000020

EDIDE2 2b1b0bfb

SD CARD INSERTED!!

When SD card is inserted and self check is OK, "SELF CHECK FAILED" is displayed.

Warning Comment
"SD CARD INSERTED!!" is displayed.

(When SD card is inserted.)

6. Service Information

(4) Copy of results of Self Check to SD card (2/2)

<How to read Self check. Log file>

“ File contents ”

[yy/mm/dd hh:mm:ss] 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

yy: year(Two last digits),
mm: month,
dd: day,
hh: hour,
mm: minute,
ss: second

No.1-19

Self check result
00 or 01 : OK
FF : NG or Not available for Self check

Items of Self check:Refer to the table below

[PAL models]

No.	Self check items	No.	Self check items
1	exec flag (Self check 01)	11	mem2 (EEPROM for Peaks)
2	ZWEI	12	pdppnl (PDP Panel module)
3	GC3FS	13	OFDM
4	adv (ADV7495A)	14	Temperature Sensor
5	vsw (Video SW)	15	FRC
6	adav(ADAV4622)	16	GC6P
7	avsw (AV SW)	17	VIF
8	Tun (Main Tuner)	18	lan
9	genx (Genx)	19	usb
10	mem1 (EEPROM for Genx)	—	—

6. Service Information

(5) CSP/BGA REPAIR PARAMETER SHEET

<For PDP series in 2009>

The following parameter is fundamental data.

Therefore, it will change according to the following factors and please adjust precise value with your environment and equipment .

1. Air-conditioner 2. Personal skill 3. Specification of Tools etc.

Tools for experiment
Company : Hakko Co.,Ltd.
Model no. : Hakko852 / Hakko853

Applicable
model

*PDP series in 2009 year ;
The following ICs are used as common parts on several boards (PCBs) in models for all of the world. And the following parameter does not change depending on module (PCB).
Therefore, please check IC size and circuit No. of replacing IC and use an appropriate parameter as below.

	Type of Definition				HD	HD	FHD	FHD	FHD/HD	FHD	FHD/HD	FHD/HD	FHD/HD	FHD	FHD	FHD	
	Circuit No.				IC9900	IC9901	IC9300	IC9902&3	IC8001	IC8001	IC8002&3	IC8002&3	IC4510	IC5100	IC5001&2	IC2600	
	IC size				27*27	12*12	35*35	12*8	27*27	31*31	12*10	12*8	19*19	31*31	12*8	23*23	
	Profile No.				Profile4	Profile3	Profile1	Profile3	Profile4	Profile4	Profile3	Profile3	Profile2	Profile5	Profile3	Profile4	
Kind of work	Item 1	Item 2	Item 3	unit													
Various set up	Initial set up	Nozzle Part No.				A1129B	A1126B	A1203B	A1126B	A1129B	A1129B	A1126B	A1126B	A1127B	A1265B	A1126B	A1129B
		Nozzle Size				31*31	15*15	35*35	15*15	31*31	31*31	15*15	15*15	19*19	32*32	15*15	31*31
		Height from nozzle to C.B.A.	Pre-heating	mm	40	30	40	30	40	40	30	30	30	40	30	40	
			Main heating	mm	4	3	4	3	4	4	3	3	3	4	3	4	
			Cool down	mm	40	3	40	3	40	40	3	3	3	40	3	40	
	Rough adjustment	Temperature	Upper side	deg	420	420	445	420	420	420	420	420	415	440	420	420	
			Downer side	deg	235	235	235	235	235	235	235	230	235	235	235		
		Blow level		l/min	20	12	22	12	20	20	12	12	12	20	12	20	
		Heat time		s	240	210	240	210	240	240	210	210	180	240	210	240	
	Fine adjustment	Temperature	Upper side	deg	370+5	360+5	370+5	360+5	370+5	370+5	360+5	360+5	375+5	370+5	360+5	370+5	
			Downer side	deg	265+5	265+5	265+5	265+5	265+5	265+5	265+5	265+5	265+5	265+5	265+5	265+5	
Repair work	Time control	Heat time	Pre-heating	s	180	155	180	155	180	180	155	155	140	180	155	180	
			Main heating	s	60	55	60	55	60	60	55	55	40	60	55	60	
		Cool down time			s	over 30	over 30	over 30	over 30	over 30	over 30	over 30	over 30	over 30	over 30	over 30	over 30
		Remark for each IC					Profile4	Profile3	Profile1	Profile3	Profile4	Profile4	Profile3	Profile3	Profile2	Profile5	Profile3
Additional Information	1. If there are some parts (Crystal, capacitor, Tuner) near the target IC, cover them with heat-resistant tape.																